El Paso Water Utilities
Public Service Board

Eastside Planned Service Area Annexation Fee Analysis

FINAL REPORT

July 2005

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Public Service Board
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1.0 Executive Summary

Red Oak Consulting (Red Oak) a division of Malcolm Pirnie, Inc., was retained by the El Paso Water Utilities Public Service Board (PSB or EPWU) to complete an economic evaluation of the costs of serving the Eastside Planned Service Area (Annexed Area). The current PSB service area as well as the potential Annexed Area is shown in Figure 1.

In analyzing the costs of serving the Annexed Area, proposed water and wastewater annexation fees were designed to nullify any gap between projected revenue received from customers and costs of serving the Annexed Area. The proposed fees are summarized in Table 1. Red Oak recommends that the current practice of annual increases in the annexed fees of 3% per year be continued.

Table 1
Proposed Annexation Fees

Description	Amount (1)
Water	$1,668
Wastewater	328
Total	$1,996

(1) Per equivalent residential unit.

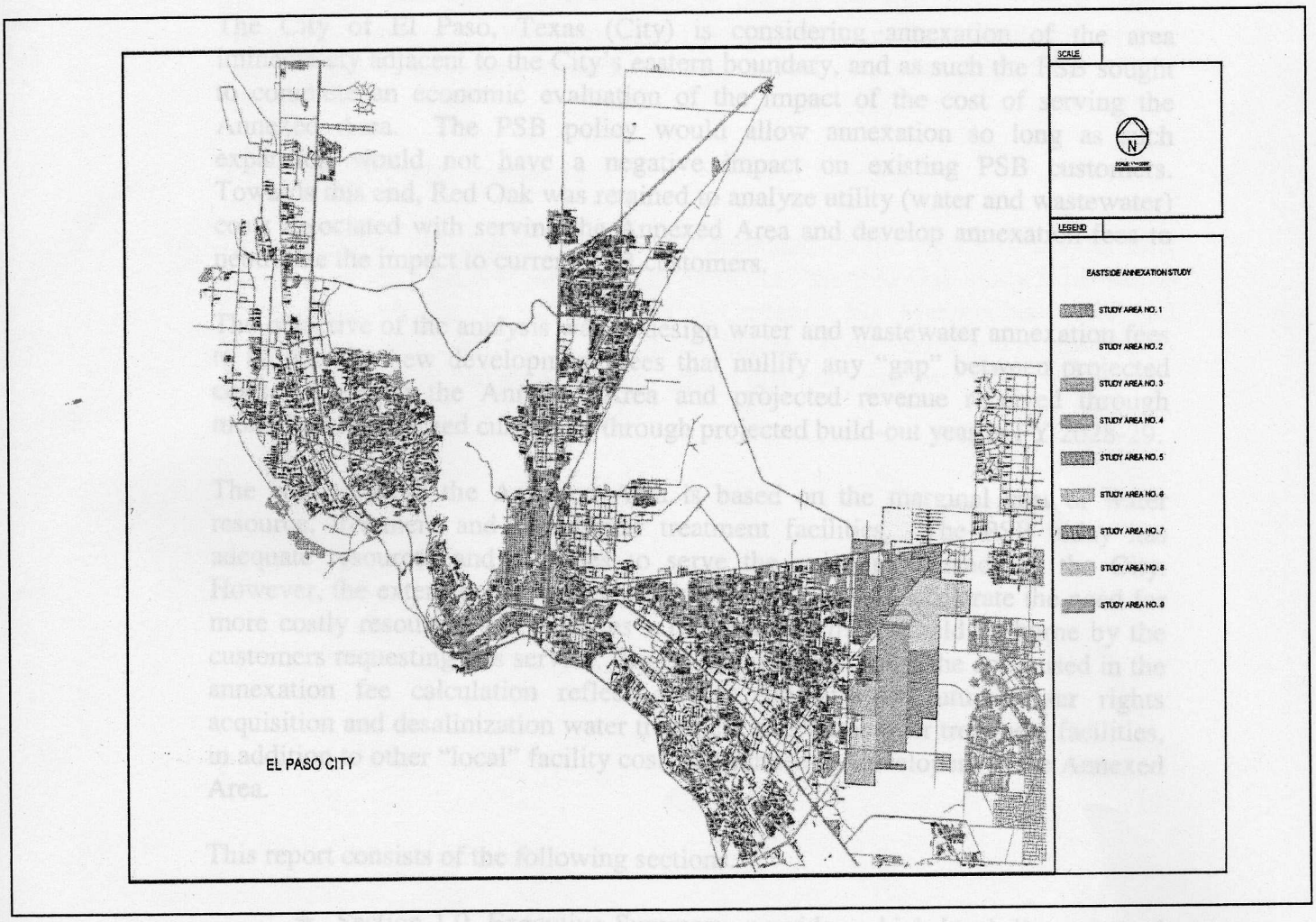
The methodology used in calculating the proposed annexation fees compares the revenue generated from customers to the costs of serving the Annexed Area; costs include operation and maintenance (O&M) expenses, and capital expenditures. Capital expenditures include both local capital facilities constructed to serve only the Annexed Area, as well as support capital facilities required to provide service to the Annexed Area, but not solely dedicated to this purpose (e.g., water resource and treatment facilities and wastewater treatment facilities). In arriving at the cost of the support capital facilities, a marginal unit cost approach was employed. Using this approach, support facilities and costs were estimated as if the Annexed Area were to be served by the next increment of water treatment, resource, and wastewater treatment facilities. More specifically, the PSB has largely acquired water resources and constructed facilities to serve areas within the City (existing and to be developed). Any new service outside the City would "use up" existing, future capacity and cause the PSB to accelerate the acquisition and construction of future, higher cost facilities. As such it is appropriate for the cost of these "future" resources and facilities to be used as the marginal cost to serve the Annexed Area. Additionally, the Annexed Area should also be assessed the cost of any on-site or local facilities not paid for by developers, i.e., facilities funded by the PSB.

PSB staff provided Red Oak with a variety of information in analyzing the costs and revenues associated with serving the Annexed Areas. The PSB produced a report titled *Eastside Water and Wastewater Facilities for Areas East of El Paso*, July 6, 2005, that discusses assumptions regarding population, accounts, water

demand and wastewater flows and local capital assets constructed to serve only the Annexed Area. The PSB report is included in Appendix A.

Additional information and assumptions were provided by PSB staff and in some cases are drawn from the current PSB financial plan. These assumptions are discussed throughout the balance of the report. Appendix B includes annual population projections for the Annexed Area as well as additional assumptions common to both the water and wastewater analysis. The proposed water annexation fee calculation and supporting schedules is included in Appendix C. The proposed wastewater annexation fee calculation and supporting schedules is included in Appendix D.

Figure 1
Existing and Annexed PSB Service Area



2.0 Introduction and Background

2.1 Introduction

The City of El Paso, Texas (City) is considering annexation of the area immediately adjacent to the City's eastern boundary, and as such the PSB sought to complete an economic evaluation of the impact of the cost of serving the Annexed Area. The PSB policy would allow annexation so long as such expansion would not have a negative impact on existing PSB customers. Towards this end, Red Oak was retained to analyze utility (water and wastewater) costs associated with serving the Annexed Area and develop annexation fees to neutralize the impact to current PSB customers.

The objective of the analysis was to design water and wastewater annexation fees to be paid by new development; fees that nullify any "gap" between projected costs of serving the Annexed Area and projected revenue received through monthly rates charged customers through projected build-out year in FY 2028-29.

The cost to serve the Annexed Area is based on the marginal cost of water resource, treatment and wastewater treatment facilities. The PSB today has adequate resources and facilities to serve the existing demands of the City. However, the extension of service outside the City would accelerate the need for more costly resources and facilities – the cost of which should be borne by the customers requesting this service. Based on this philosophy, the costs used in the annexation fee calculation reflect current estimates of future water rights acquisition and desalinization water treatment and wastewater treatment facilities, in addition to other "local" facility costs not funded by developers in the Annexed Area.

This report consists of the following sections.

- Section 1.0, Executive Summary, provides a high level discussion of the methodology followed in arriving at the proposed water and wastewater annexation fees.
- Section 2.0, Introduction and Background, includes information about the study, the PSB and acknowledgements.
- Section 3.0, Methodology, includes a detailed discussion of the methodology followed in calculating the proposed water and wastewater annexation fees.

2.2 Reliance on PSB Provided Data

During the course of this project the PSB (and/or its representatives) provided Red Oak with a variety of technical information, including cost and revenue data. Red Oak did not independently assess or test for the accuracy of such data – historic or projected. We have relied on this data in the formulation of our findings and subsequent recommendations, as well as in the preparation of this report.

2.3 Acknowledgements

The successful completion of this study depended on the efforts of several staff members of the PSB and the City. In particular, the Red Oak study team would like to thank Mr. Ed Archuleta, Mr. Nick Costanzo, Ms. Marcela Navarrete, and Messrs. Armando Gonzalez Jr., Humberto Juarez, David Torres and Felipe Lopez, Jr. for their support and guidance throughout this study process.

3.0 Methodology

In analyzing the costs of serving the Annexed Area, proposed water and wastewater annexation fees were designed to eliminate any difference between the projected revenue to be received from, and costs of serving customers within the Annexed Area.

First, annual revenue is calculated based on the projected PSB revenue per account and the projected number of accounts served. Next, costs, (O&M expenses and capital expenditures) are projected by year. Projected annual revenues less costs result in annual financial surpluses or deficits for the Annexed Area. The annexation fee is calculated by discounting these surpluses or deficits over the 25-year study period through a net present value (NPV) calculation at a discount rate of 5%.

3.1 Annexation Fee Calculation

The annexation fee methodology discussed below follows the annexation fee calculation worksheet included as the first page within Appendix C for water and Appendix D for wastewater. Each column and supporting information is discussed below moving from left to right on the worksheets in these appendices.

Annexed Accounts

PSB staff provided population estimates for the Annexed Area by year. Population projections represent the 7 planning sections within the Annexed Area and are included in Appendix B. Area 2 also includes another "sub-area", Area 9, which is expected to be comprised solely of commercial development. Annexed accounts are projected annually based on the population projections and an assumed 3.0 persons per household (pph) or account.

Flow (1,000 gallons)

Water demand is based on 140 gallons per capita per day (gpcd). Applying the assumed pph and gpcd of 3.0 and 140, respectively, the result is 153,300 gallons of annual water use per account.

Wastewater flows is based on 100 gpcd. Applying the assumed pph and gpcd results in an estimated 109,500 gallons of wastewater flows per account per year.

The projected annual flows from the Annexed Area for water and wastewater are calculated based on the projected annexed accounts and annual demand per account as previously described. However, peak flows for both water and wastewater are used in the development of the capital facility needs as estimated by PSB Staff (see Appendix A).

PSB Average Annual Revenue Per Account

The FY 2004-05 average annual revenue per account for water and wastewater is $493 and $284 respectively as calculated within the current PSB financial plan. The average annual revenue per account is projected to increase by the annual increases as summarized for both water and wastewater in Table 2; these increases are consistent with the current PSB financial plan. Starting in FY 2015-16, 2% increases are projected for every other year.

Table 2
Projected Revenue Increase

Fiscal Year	Revenue Per Account	
	Water	Wastewater
2005-06	0.0%	0.0%
2006-07	0.0%	0.0%
2007-08	5.0%	5.0%
2008-09	0.0%	0.0%
2009-10	5.0%	5.0%
2010-11	0.0%	0.0%
2011-12	5.0%	5.0%
2012-13	0.0%	0.0%
2013-14	5.0%	5.0%

Revenue at PSB Rates

Annual revenue for the Annexed Area is calculated based on the projected average annual revenue per account and number of accounts.

Costs – O&M

O&M expense per 1,000 gallon (kgal) and projected annual flows are used to estimate annual O&M expenses. O&M expenses are projected at a total system level for both water and wastewater as currently projected within the PSB financial plan. For water, the O&M expenses include the combined water and reuse O&M less reuse revenues as water revenues subsidize the cost of providing reuse services.

Total system demand, projected by the PSB in FY 2005-06 at 34 billion gallons for water and approximately 16 billion gallons for wastewater, is used to calculate to the annual O&M expense per kgal. Total system demand is projected to increase at the same rate as the population increase projected within the current PSB financial plan.

Population and O&M inflation assumptions are summarized in Table 3. There are additional increases for O&M costs above the 3% inflation assumption to account for major capital facility additions for both water and wastewater and are discussed below.

Table 3
Summary of Inflation Assumptions

Fiscal Year	Population	O&M	Capital
2005-06	2.46%	3.0%	3.0%
2006-07	2.40%	3.0%	3.0%
2007-08	2.35%	3.0%	3.0%
2008-09	2.29%	3.0%	3.0%
2009-10	2.24%	3.0%	3.0%
2011 - 2029	1.80%	3.0%	3.0%

Total water O&M expenses are projected to increase in FY 2007 and 2008 to reflect the expected completion of two major capital projects: (1) the Upper Valley Water Treatment Plant in FY 2005-06; and (2) the Desalinization Water Treatment Plant (Desal Plant) in FY 2006-07. The increase to O&M expenses occurs in the fiscal year after the projects are projected to be completed.

Total wastewater O&M expenses are also increased in FY 2015-16 as a result of the expansion of the Bustamante Wastewater Treatment Plant (Bustamante) projected to be completed in FY 2014-15. Like water operations, the increase to wastewater O&M occurs in the fiscal year after the projects are projected to be completed.

Costs – Capital

Total capital costs are projected annually and are split into two categories: local and support facility. These two categories are discussed in detail separately for water and wastewater below. The PSB provided capital cost information is in current year dollars and has been inflated annually by 3%. Inflated capital costs are translated into annual debt service payments based on an assumed term of 20 years and an annual interest rate of 5%. The annual debt service payments represent the total capital cost of providing service to customers within the Annexed Area.

Annexation Fee Calculation

Annual revenue less O&M expenses and capital costs results in the projected annual surplus or deficit. The indicated annual surplus or deficit over the 25-year study period is discounted by 5% in arriving at the NPV of providing water and wastewater service to the Annexed Area. The NPV of providing water service results in a deficit of $64,532,684 and for wastewater service, a deficit of $12,670,288. The calculated NPV is divided by the projected number of annexed accounts of 38,681 in arriving at the proposed water and wastewater annexation fees as summarized in Table 4.

Table 4
Proposed Annexation Fees

Description	Amount
Water	$1,668
Wastewater	328
Total	$1,996

3.2 Water and Wastewater Capital Facilities

Local capital facilities are those constructed by the PSB to serve only the Annexed Area customers. PSB staff projected local facility capital needs. The projected local facility capital costs by year are discussed within the PSB report titled *Eastside Water and Wastewater Facilities for Areas East of El Paso*, July 6, 2005, included in Appendix A. Within this PSB report, Tables #1 and #5 summarize the projected annual local capital facilities expenditures for water and wastewater, respectively.

Support water capital facilities include only water resource facilities. The Desal Plant capital costs and yield in millions of gallons per day (MGD) were used to calculate a marginal unit water resource cost per MGD. The Desal Plant represents the best available information for determining a unit cost of water resources that would be available to serve the Annexed Area. The marginal unit cost and the projected water demand at build-out was used to estimate the cost of water resource assets required to serve the annexed areas.

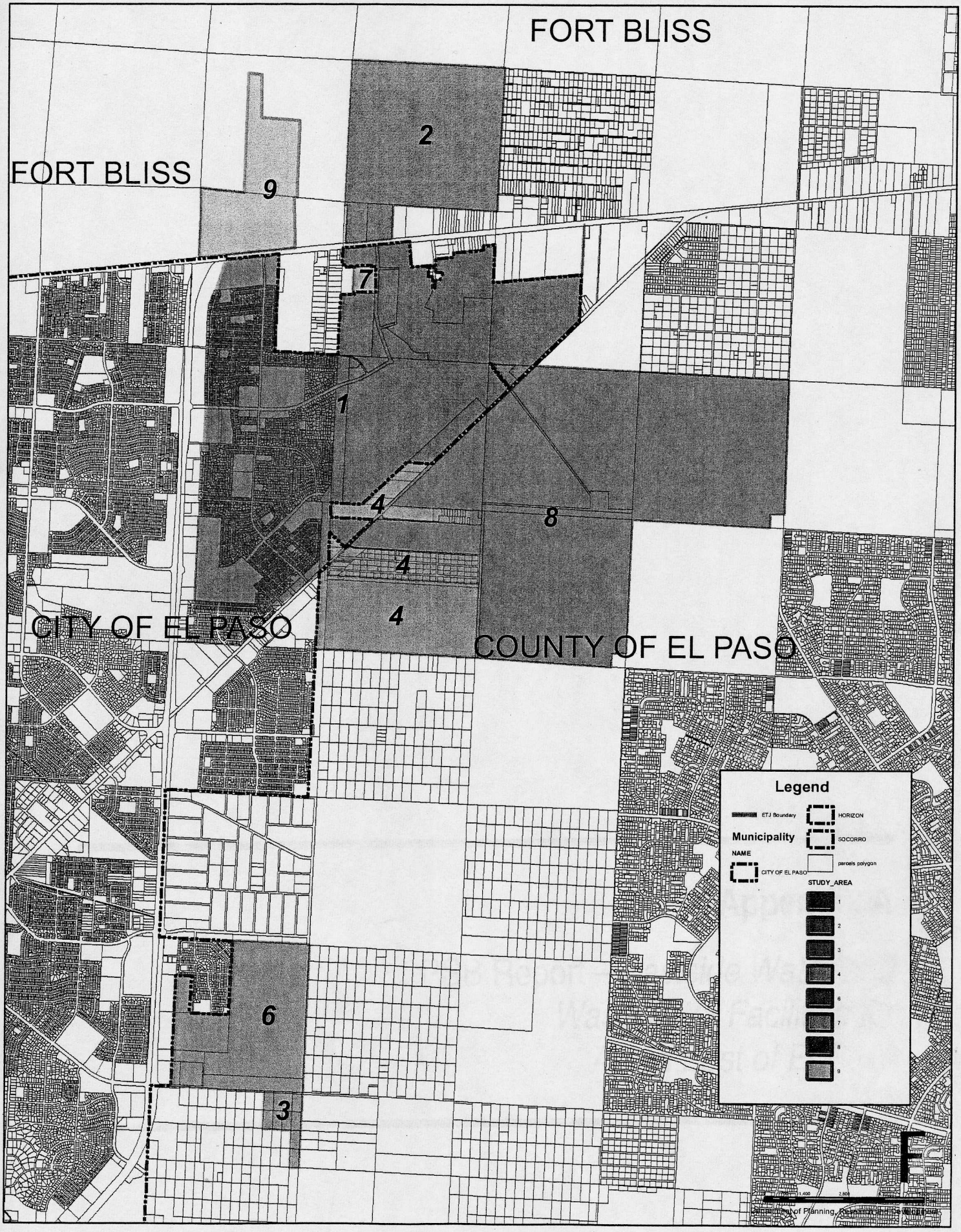
Support wastewater capital facilities include a major collection interceptor and wastewater treatment facilities. The Eastside Interceptor was constructed to serve both developments within the Annexed Area as well as development adjacent to the Annexed Area. The unit cost of the interceptor was calculated and only the portion of the pipeline constructed to serve the Annexed Area, based on projected wastewater flows at build-out and the unit cost, was included for purposes of calculating annual capital costs.

A second support wastewater capital facility is a wastewater treatment plant. In calculating the unit cost of each MGD of treatment plant capacity, a blended

approach was used in arriving at a unit cost of treatment plant capacity. For wastewater treatment plant facilities, the best available information includes both previous and future capital expenditures associated with the Bustamante treatment plant. The PSB completed construction of the Bustamante plant in 1991 with a capacity of 39.0 MGD. In 2004, the plant was further improved to enable easier expansion in the future, but treatment plant capacity was not added. The PSB projects the next expansion of Bustamante will be completed in FY 2014-15, increasing capacity by 14.5 MGD and will cost $33.0 million in current year dollars.

The 1991 and 2004 improvements were escalated at the Engineering News Record Construction Cost Index (ENR-CCI) to arrive at the replacement cost new (RCN) of the improvements or the costs if the assets were constructed today. The RCN of the current Bustamante facility and the planned expansion expenditures were totaled and divided by the total future Bustamante capacity in arriving at the estimated marginal unit cost of such facilities. The marginal unit cost per MGD and the projected wastewater flows at build-out were used to calculate the total cost of wastewater treatment plant and other facilities.

Annexation Analysis



Appendix A

PSB Report – *Eastside Water and Wastewater Facilities for Areas East of El Paso*

EXECUTIVE SUMMARY

EASTSIDE WATER AND WASTEWATER FACILITIES FOR AREAS EAST OF EL PASO

July 6, 2005

PREPARED BY:

EL PASO WATER UTILITIES
PUBLIC SERVICE BOARD

EXECUTIVE SUMMARY
EASTSIDE WATER AND WASTEWATER FACILITIES
FOR AREAS EAST OF EL PASO

INTRODUCTION

The purpose of this study is to develop a plan for required water and wastewater infrastructure and preliminary cost estimates to serve the East area of El Paso, and to allocate cost of the proposed areas of annexation East of El Paso. El Paso Water Utilities has developed a water and wastewater master plan that envisions service to the annexed area.

This document summarizes the infrastructure and associated cost for the areas within the ETJ of East El Paso. Included in this report: 1) projections of populations within the study area; 2) required water infrastructure to serve the proposed annexation areas; 3) required wastewater infrastructure to serve the proposed annexation areas; and 4) estimation of the program costs to serve the annexed area.

ANNEXATION STUDY AREA BOUNDARIES

The area contemplated for annexation is the area bounded by Interstate Highway 10 on the south, El Paso City limits (Loop 375) on the west, the general north-south extension of the Horizon City boundary to the east, and Ft. Bliss Military Reservation approximately 1 ¼ miles north of Montana Ave. Attached figure1 indicates the proposed annexation area.

POPULATION FOR ANNEXATION STUDY AREA

The City of El Paso Department of Planning, Research and Development developed population projections for the proposed Annexation in El Paso's Eastside. The population projections in the proposed annexed area for the year 2015 were approximately 66,023 people and 22,008 housing units. In addition, population projections for the year 2029 were approximately 116,041 people and 38,680 housing units. The projected land uses are approximately 647 acres of commercial, 5,526 acres of residential, 1,036 acres of commercial, 1,486 acres of schools and parks combined.

WATER FACILITIES

WATER DEMANDS FOR ANNEXATION AREA

Average water demand associated to residential development was calculated by applying a 115-gal/cap/day unit demand rate. A population density factor of 3.0 people per dwelling and 7 dwellings per acre is applied for residential development, as recommended by the City Planning Department. This study uses a 1.71 peak factor to determine peak day demand, as recommended in Parkhill, Smith, and Cooper Engineers' Distribution System Modeling Study, dated May 2004. The peak day demand rate calculates to 196.65 gal/cap/day. The total average and peak day water demand rate due to residential development (5,526 acres) equals to approximately 13.34 MGD and 22.82 MGD, respectively.

Commercial water demand was calculated by using 1,150 gal/day/acre. A 1.71 peak factor is used to calculate the peak day demand for 1,036 acres of commercial development, including retail, and office. This calculates to approximately 2.03 MGD demand.

The commercial water demand of 1,150 gal/day/acre is also applied to parks, public uses, and schools (1,486 acres-combined) in this study. The combined peak water demand (using a 1.71 peak factor) is calculated at approximately 2.92 MGD.

The total expected average and peak water demand by the study area is approximately 16.24 MGD and 27.77 MGD, respectively. The calculated average and peak day composite demand for the study area are 140 gal/cap/day, and 239 gal/cap/day, respectively.

WATER SYSTEM REQUIREMENTS FOR THE ANNEXATION AREA

El Paso Water Utilities operates a completely integrated system and must plan for continued growth of the entire East area including those inside the current City limits and those areas outside the current City limits. Currently, the Utility serves areas in the East outside the City through wholesale contracts to the Lower Valley Water District, Homestead MUD, East Montana MUD, and the Paseo Del Este MUD. The proposed annexation areas will continue to grow as will the areas inside the City. Cost of service is proportioned by the projected service population. Cost of service to the annexed area considers water transmission mains, booster stations, and storage reservoirs in the area. A water master plan for the entire East area is necessary in order to determine the pro-rata share of the annexed area.

El Paso Water Utilities recently completed a Water Facilities Master Plan of major infrastructure needs of the East area over the next twenty-four (24) years,

as indicated in attached figure 2. Onsite improvements (i.e. water distribution system inside a developed area) are not shown, as these will be paid for by developers, grants or customers/PSB service agreements according to established rules and regulations. EPWU and Fort Bliss are jointly involved in the pre-construction phase of a project to treat ground water supplies thru a large inland desalination plant.

Attached Tables 1, 2, 3, and 4 show the quantity and timing of planned major water distribution and transmission mains improvements necessary to serve growth of the entire East area. The growth in the annexed area will require a pro-rata share of those facilities.

COST OF PROVIDING SERVICE TO THE ANNEXED AREA

Attached Table 1 indicates the cost of water distribution and transmission mains, booster stations, and storage reservoirs anticipated to be constructed at annexation through Year 2029 to serve the East area. The un-inflated cost is $60,680,000.

WASTEWATER FACILITIES

WASTEWATER FLOWS PRODUCED BY THE ANNEXATION AREA

The average per capita wastewater flow rate (Brown and Caldwell, Eastside Interceptor System Phase IV-A and IV-B) was calculated by dividing the annual average flow rate at the Bustamante WWTP by the existing population within the Bustamante Service Area (Eastside of El Paso). The average flow rate is approximately 100 gpcpd. Future average wastewater flows were then projected by applying the per capita flow rate to the population of the service areas making up the east El Paso area. From influent data to the Bustamante WWTP, the ratio of peak 2-hour flow to the annual average flow was calculated to equal 1.76. This ratio is typically referred as the peaking factor. Therefore, the peak per capita wastewater flow rate is 176 gpcpd (100 gpcpd * 1.76).

WASTEWATER SYSTEM REQUIREMENTS FOR THE ANNEXATION AREA

The recommendations provided in this executive summary consisted of a system of area collection lines, and interceptors; which must be constructed within the annexation area; see attached figure 3. The construction sequence would be dependent to a large extent on which areas become annexed first and their development schedules.

Areas north of Montana Avenue may be serviced by utilizing residual capacity of the existing collection system located in the triangle area. The collection system includes interceptors, a lift station, and a force main that conveys wastewater to the Saul Kleinfeld System.

Future systems which include the construction of a 42-inch interceptor (Eastside Interceptor System) from the Montwood Lift Station to the lower ends of the Saul Kleinfeld System will be constructed prior to 2007. A continuation of the Eastside Interceptor System with a 52-inch interceptor will connect to the Mesa Drain Interceptor. The total length of the interceptor is approximately eleven miles.

COST OF PROVIDING SERVICE TO THE ANNEXED AREA

Attached Table 5 identifies the cost of wastewater collection mains anticipated to be constructed within the annexation area through Year 2029 to serve the area. The un-inflated cost is $13,500,000. The estimate include contingency amounts to cover various support expenses such as engineering, administrative, legal, overhead/profit, and construction contingencies.

TABLE #1

TOTAL STUDY AREAS

YEAR	POPULATION	# OF CONN. RESIDENTIAL	# OF CONN. COMMERCIAL	# OF CONN. SCHOOLS & PARKS	TOTAL # OF CONN	TOTAL UNIT COST
UNIT COST						
2005	0	0	0	0	0	$ 316,118
2006	0	0	0	0	0	$ 4,581,998
2007	4,746	1,582	152	537	2,271	$ 16,424,460
2008	10,146	3,382	348	1102	4,832	$ -
2009	17,301	5,767	544	1668	7,978	$ -
2010	26,901	8,967	1,080	2349	12,396	$ -
2011	34,524	11,508	1,624	3060	16,192	$ 462,360
2012	42,623	14,208	2,117	3611	19,935	$ 3,883,941
2013	50,723	16,908	2,610	4162	23,679	$ 1,579,338
2014	58,823	19,608	3,103	4742	27,452	$ 1,568,796
2015	66,023	22,008	3,661	5467	31,136	$ 6,223,968
2016	69,597	23,199	4,596	5477	33,271	$ -
2017	73,170	24,390	4,795	5477	34,662	$ 99,150
2018	76,743	25,581	4,994	6057	36,632	$ 793,200
2019	80,316	26,772	5,194	6057	38,023	$ 993,879
2020	83,889	27,963	5,393	6637	39,993	$ 7,951,032
2021	87,462	29,154	5,593	6637	41,384	$ -
2022	91,035	30,345	5,792	6927	43,064	$ 237,168
2023	94,608	31,536	5,992	7217	44,745	$ 1,897,344
2024	98,181	32,727	6,255	7521	46,503	$ 1,419,234
2025	101,754	33,918	6,279	9900	50,097	$ 11,453,022
2026	105,327	35,109	6,391	10190	51,690	$ 793,200
2027	108,900	36,300	6,502	10190	52,992	$ -
2028	112,473	37,491	6,613	10480	54,584	$ -
2029	116,041	38,680	7,514	10770	56,964	$ -
				TOTAL		$ 60,678,207
				Approx. Cost in Millions		$ 60.68

TABLE #2

TOTAL STUDY AREAS (RESERVOIRS)

YEAR	RESIDENTIAL	POPULATION	# OF CONN. RESIDENTIAL	# OF CONN. COMMERCIAL	# OF CONN. SCHOOLS & PARKS	TOTAL # OF CONN	STORAGE REQUIRED MG	STORAGE PROVIDED MG*	STORAGE COST	SUBTOTAL	MOBILIZATION	CONTINGENCIES	ENGINEERING	TOTAL
UNIT COST									$ 1.00/GAL		5%	15%	15%	COST
2005	0	0	0	0	0	0	0	0		$ -	$ -	$ -	$ -	$ -
2006	0	0	0	0	0	0	0	0		$ -	$ -	$ -	$ -	$ -
2007	226	4,746	1,582	152	537	2,271	0.45	5.5	$ 5,500,000	$ 5,500,000	$ 275,000	$ 825,000	$ 825,000	$ 6,600,000
2008	483	10,146	3,382	348	1,102	4,832	0.97	5.5		$ -	$ -	$ -	$ -	$ -
2009	824	17,301	5,767	544	1,668	7,978	1.60	5.5		$ -	$ -	$ -	$ -	$ -
2010	1,281	26,901	8,967	1,080	2,349	12,396	2.48	5.5		$ -	$ -	$ -	$ -	$ -
2011	1,644	34,524	11,508	1,624	3,060	16,192	3.24	5.5		$ -	$ -	$ -	$ -	$ -
2012	2,030	42,623	14,208	2,117	3,611	19,935	3.99	5.5		$ -	$ -	$ -	$ -	$ -
2013	2,415	50,723	16,908	2,610	4,162	23,679	4.74	5.5		$ -	$ -	$ -	$ -	$ -
2014	2,801	58,823	19,608	3,103	4,742	27,452	5.49	5.5		$ -	$ -	$ -	$ -	$ -
2015	3,144	66,023	22,008	3,661	5,467	31,136	6.23	8	$ 2,500,000	$ 2,500,000	$ 125,000	$ 375,000	$ 375,000	$ 3,000,000
2016	3,314	69,597	23,199	4,596	5,477	33,271	6.65	8		$ -	$ -	$ -	$ -	$ -
2017	3,484	73,170	24,390	4,795	5,477	34,662	6.93	8		$ -	$ -	$ -	$ -	$ -
2018	3,654	76,743	25,581	4,994	6,057	36,632	7.33	8		$ -	$ -	$ -	$ -	$ -
2019	3,825	80,316	26,772	5,194	6,057	38,023	7.60	8		$ -	$ -	$ -	$ -	$ -
2020	3,995	83,889	27,963	5,393	6,637	39,993	8.00	10.5	$ 2,500,000	$ 2,500,000	$ 125,000	$ 375,000	$ 375,000	$ 3,000,000
2021	4,165	87,462	29,154	5,593	6,637	41,384	8.28	10.5		$ -	$ -	$ -	$ -	$ -
2022	4,335	91,035	30,345	5,792	6,927	43,064	8.61	10.5		$ -	$ -	$ -	$ -	$ -
2023	4,505	94,608	31,536	5,992	7,217	44,745	8.95	10.5		$ -	$ -	$ -	$ -	$ -
2024	4,675	98,181	32,727	6,255	7,521	46,503	9.30	10.5		$ -	$ -	$ -	$ -	$ -
2025	4,845	101,754	33,918	6,279	9,900	50,097	10.02	16	$ 5,500,000	$ 5,500,000	$ 275,000	$ 825,000	$ 825,000	$ 6,600,000
2026	5,016	105,327	35,109	6,391	10,190	51,690	10.34	16		$ -	$ -	$ -	$ -	$ -
2027	5,186	108,900	36,300	6,502	10,190	52,992	10.60	16		$ -	$ -	$ -	$ -	$ -
2028	5,356	112,473	37,491	6,613	10,480	54,584	10.92	16		$ -	$ -	$ -	$ -	$ -
2029	5,526	116,041	38,680	7,514	10,770	56,964	11.39	16		$ -	$ -	$ -	$ -	$ -
									$ 16,000,000	$ 16,000,000		TOTAL		$ 21,600,000
												Approx. Cost in Millions		$ 21.60

*NOTE: THE STORAGE PROVIDED INCLUDES 2.0 MG VISTA DEL SOL SUPPLY STORAGE

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TABLE #3

TOTAL STUDY AREAS (PUMP STATIONS)

YEAR	POPULATION	# OF CONN. RESIDENTIAL	# OF CONN. COMMERCIAL	# OF CONN. SCHOOLS & PARKS	TOTAL # OF CONN	PUMPING CAPACITY GPM	PUMPING CAPACITY MGD	PUMPING PROVIDED MGD	PUMPING COST	TRAFFIC CONTROL	ELECTRICAL	TELEMETRY	CHLORINATION	SUBTOTAL	MOBILIZATION	CONTINGENCIES	ENGINEERING	TOTAL
UNIT COST									$ 0.096/GAL	LS	LS	LS	LS		5%	15%	15%	COST
2005	0	0	0	0	0	0	0.00	0						$ -	$ -	$ -	$ -	$ -
2006	0	0	0	0	0	0	0.00	0						$ -	$ -	$ -	$ 390,900	$ 390,900
2007	4,746	1,582	152	537	2,271	1362	1.96	20	$ 1,920,000		$ 386,000	$ 157,000	$ 143,000	$ 2,606,000	$ 130,300	$ 390,900	$ -	$ 3,127,200
2008	10,146	3,382	348	1102	4,832	2899	4.17	20						$ -	$ -	$ -	$ -	$ -
2009	17,301	5,767	544	1668	7,978	4787	6.89	20						$ -	$ -	$ -	$ -	$ -
2010	26,901	8,967	1,080	2349	12,396	7438	10.71	20						$ -	$ -	$ -	$ -	$ -
2011	34,524	11,508	1,624	3060	16,192	9715	13.99	20						$ -	$ -	$ -	$ 97,650	$ 97,650
2012	42,623	14,208	2,117	3611	19,935	11961	17.22	25	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2013	50,723	16,908	2,610	4162	23,679	14208	20.46	25						$ -	$ -	$ -	$ 97,650	$ 97,650
2014	58,823	19,608	3,103	4742	27,452	16471	23.72	30	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ 97,650	$ 878,850
2015	66,023	22,008	3,661	5467	31,136	18681	26.90	35	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2016	69,597	23,199	4,596	5477	33,271	19963	28.75	35						$ -	$ -	$ -	$ -	$ -
2017	73,170	24,390	4,795	5477	34,662	20797	29.95	35						$ -	$ -	$ -	$ 97,650	$ 97,650
2018	76,743	25,581	4,994	6057	36,632	21979	31.65	40	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2019	80,316	26,772	5,194	6057	38,023	22814	32.85	40						$ -	$ -	$ -	$ 97,650	$ 97,650
2020	83,889	27,963	5,393	6637	39,993	23996	34.55	45	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2021	87,462	29,154	5,593	6637	41,384	24830	35.76	45						$ -	$ -	$ -	$ -	$ -
2022	91,035	30,345	5,792	6927	43,064	25839	37.21	45						$ -	$ -	$ -	$ 97,650	$ 97,650
2023	94,608	31,536	5,992	7217	44,745	26847	38.66	50	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2024	98,181	32,727	6,255	7521	46,503	27902	40.18	50						$ -	$ -	$ -	$ -	$ -
2025	101,754	33,918	6,279	9900	50,097	30058	43.28	50						$ -	$ -	$ -	$ 97,650	$ 97,650
2026	105,327	35,109	6,391	10190	51,690	31014	44.66	55	$ 480,000		$ 96,000	$ 39,000	$ 36,000	$ 651,000	$ 32,550	$ 97,650	$ -	$ 781,200
2027	108,900	36,300	6,502	10190	52,992	31795	45.79	55						$ -	$ -	$ -	$ -	$ -
2028	112,473	37,491	6,613	10480	54,584	32751	47.16	55						$ -	$ -	$ -	$ -	$ -
2029	116,041	38,680	7,514	10770	56,964	34178	49.22	55						$ -	$ -	$ -	$ -	$ -
									$ 5,280,000	$ -	$ 1,058,000	$ 430,000	$ 395,000	$ 7,163,000			TOTAL	$ 9,670,050
																	Approx. Cost in Millions	$ 9.67

TABLE #4

TOTAL STUDY AREAS (WATERLINES)

YEAR	POPULATION	# OF CONN. RESIDENTIAL	# OF CONN. COMMERCIAL	# OF CONN. SCHOOLS & PARKS	TOTAL # OF CONN	20" LINE FT	24" LINE FT	30" LINE FT	36" LINE FT	TOTAL LINE FT	20" LINE COST	24" LINE COST	30" LINE COST	36" LINE COST	TOTAL LINE COST
UNIT COST															
2005	0	0	0	0	0					0	$ -	$ -	$ -	$ -	$ -
2006	0	0	0	0	0	7400	8000			15400	$ 555,000	$ 720,000.00	$ -	$ -	$ 1,275,000.00
2007	4,746	1,582	152	537	2,271	9000	23600	3000	7700	43300	$ 675,000	$ 2,124,000.00	$ 330,000.00	$ 962,500.00	$ 4,091,500.00
2008	10,146	3,382	348	1102	4,632					0	$ -	$ -	$ -	$ -	$ -
2009	17,301	5,767	544	1668	7,978					0	$ -	$ -	$ -	$ -	$ -
2010	26,901	8,967	1,080	2349	12,396					0	$ -	$ -	$ -	$ -	$ -
2011	34,524	11,508	1,624	3060	16,192					0	$ -	$ -	$ -	$ -	$ -
2012	42,623	14,208	2,117	3611	19,935				15900	15900	$ -	$ -	$ -	$ 1,987,500.00	$ 1,987,500.00
2013	50,723	16,908	2,610	4162	23,679		13180			13180	$ -	$ 1,186,200.00	$ -	$ -	$ 1,186,200.00
2014	58,823	19,608	3,103	4742	27,452					0	$ -	$ -	$ -	$ -	$ -
2015	66,023	22,008	3,661	5467	31,136		10860	6140	2530	19530	$ -	$ 977,400.00	$ 675,400.00	$ 316,250.00	$ 1,969,050.00
2016	69,597	23,199	4,596	5477	33,271					0	$ -	$ -	$ -	$ -	$ -
2017	73,170	24,390	4,795	5477	34,662					0	$ -	$ -	$ -	$ -	$ -
2018	76,743	25,581	4,994	6057	36,632					0	$ -	$ -	$ -	$ -	$ -
2019	80,316	26,772	5,194	6057	38,023					0	$ -	$ -	$ -	$ -	$ -
2020	83,889	27,963	5,393	6637	39,993		15350	13660	3850	32870	$ -	$ 1,382,400.00	$ 1,502,600.00	$ 481,250.00	$ 3,366,250.00
2021	87,462	29,154	5,593	6637	41,384					0	$ -	$ -	$ -	$ -	$ -
2022	91,035	30,345	5,792	6927	43,064					0	$ -	$ -	$ -	$ -	$ -
2023	94,608	31,536	5,992	7217	44,745		9840			9840	$ -	$ 885,600.00	$ -	$ -	$ 885,600.00
2024	98,181	32,727	6,255	7521	46,503					0	$ -	$ -	$ -	$ -	$ -
2025	101,754	33,918	6,279	9900	50,097	5410	38060			43470	$ 405,750	$ 3,425,400.00	$ -	$ -	$ 3,831,150.00
2026	105,327	35,109	6,391	10190	51,690					0	$ -	$ -	$ -	$ -	$ -
2027	108,900	36,300	6,502	10190	52,992					0	$ -	$ -	$ -	$ -	$ -
2028	112,473	37,491	6,613	10480	54,584					0	$ -	$ -	$ -	$ -	$ -
2029	116,041	38,680	7,514	10770	56,964					0	$ -	$ -	$ -	$ -	$ -
															$ 18,592,250.00

TOTAL STUDY AREAS (WATERLINES)

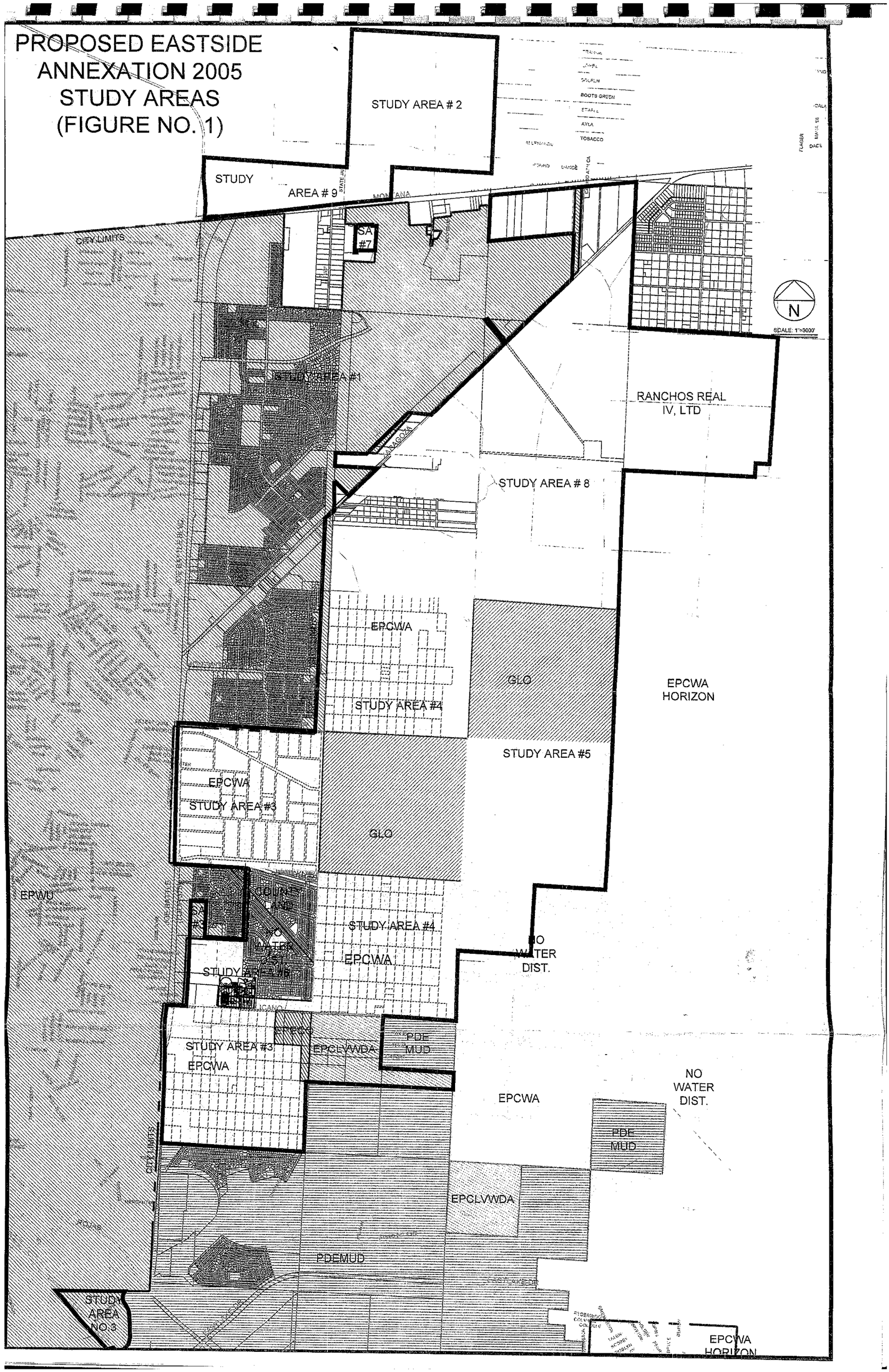
	TRENCH PROTECTION	48-INCH STL. CAS.	PAVEMENT CUT & RESTORE	TRAFFIC CONTROL	CEMENT STABILIZED BACKFILL	SUBTOTAL	MOBILIZATION	CONTINGENCIES	ENGINEERING	TOTAL
	$ 3.00/LF	$ 650.00/LF	$ 7.00/SF	LS	$ 55.00/CY		5%	15%	15%	COST
2005						$ -	$ -	$ -	$ 316,118	$ 316,118
2006	$ 46,200		$ 539,000	$ 8,000	$ 239,250	$ 2,107,450	$ 105,373	$ 316,118	$ 837,158	$ 3,366,098
2007	$ 126,300	$ 780,000	$ 336,000	$ 8,000	$ 239,250	$ 5,581,050	$ 279,053	$ 837,158	$ -	$ 6,697,260
2008						$ -	$ -	$ -	$ -	$ -
2009						$ -	$ -	$ -	$ -	$ -
2010						$ -	$ -	$ -	$ -	$ -
2011						$ -	$ -	$ -	$ -	$ -
2012	$ 45,900	$ 390,000		$ 8,000		$ 2,431,400	$ 121,570	$ 364,710	$ 364,710	$ 3,102,741
2013	$ 39,540			$ 8,000		$ 1,233,740	$ 61,687	$ 185,061	$ 1,200	$ 1,481,688
2014				$ 8,000		$ 8,000	$ 400	$ 1,200	$ 305,346	$ 314,946
2015	$ 58,590			$ 8,000		$ 2,035,640	$ 101,782	$ 305,346	$ -	$ 2,442,768
2016						$ -	$ -	$ -	$ -	$ -
2017						$ -	$ -	$ -	$ -	$ -
2018						$ -	$ -	$ -	$ 1,500	$ 1,500
2019				$ 10,000		$ 10,000	$ 500	$ 1,500	$ -	$ 12,000
2020	$ 98,610			$ 10,000		$ 3,474,860	$ 173,743	$ 521,229	$ -	$ 4,169,832
2021						$ -	$ -	$ -	$ -	$ -
2022						$ -	$ -	$ -	$ 139,518	$ 139,518
2023	$ 29,520			$ 15,000		$ 930,120	$ 46,506	$ 139,518	$ -	$ 1,116,144
2024						$ -	$ -	$ -	$ 594,234	$ 594,234
2025	$ 130,410			$ -		$ 3,961,560	$ 198,078	$ 594,234	$ 1,500	$ 4,755,372
2026				$ 10,000		$ 10,000	$ 500	$ 1,500		$ 12,000
2027				$ -		$ -	$ -	$ -	$ -	$ -
2028				$ -		$ -	$ -	$ -	$ -	$ -
2029				$ -		$ -	$ -	$ -	$ -	$ -
	$ 575,070	$ 1,170,000	$ 875,000	$ 93,000	$ 478,500	$ 21,783,820			TOTAL	$ 29,408,157
									Approx. Cost in Millions	$ 29.41

TABLE #5

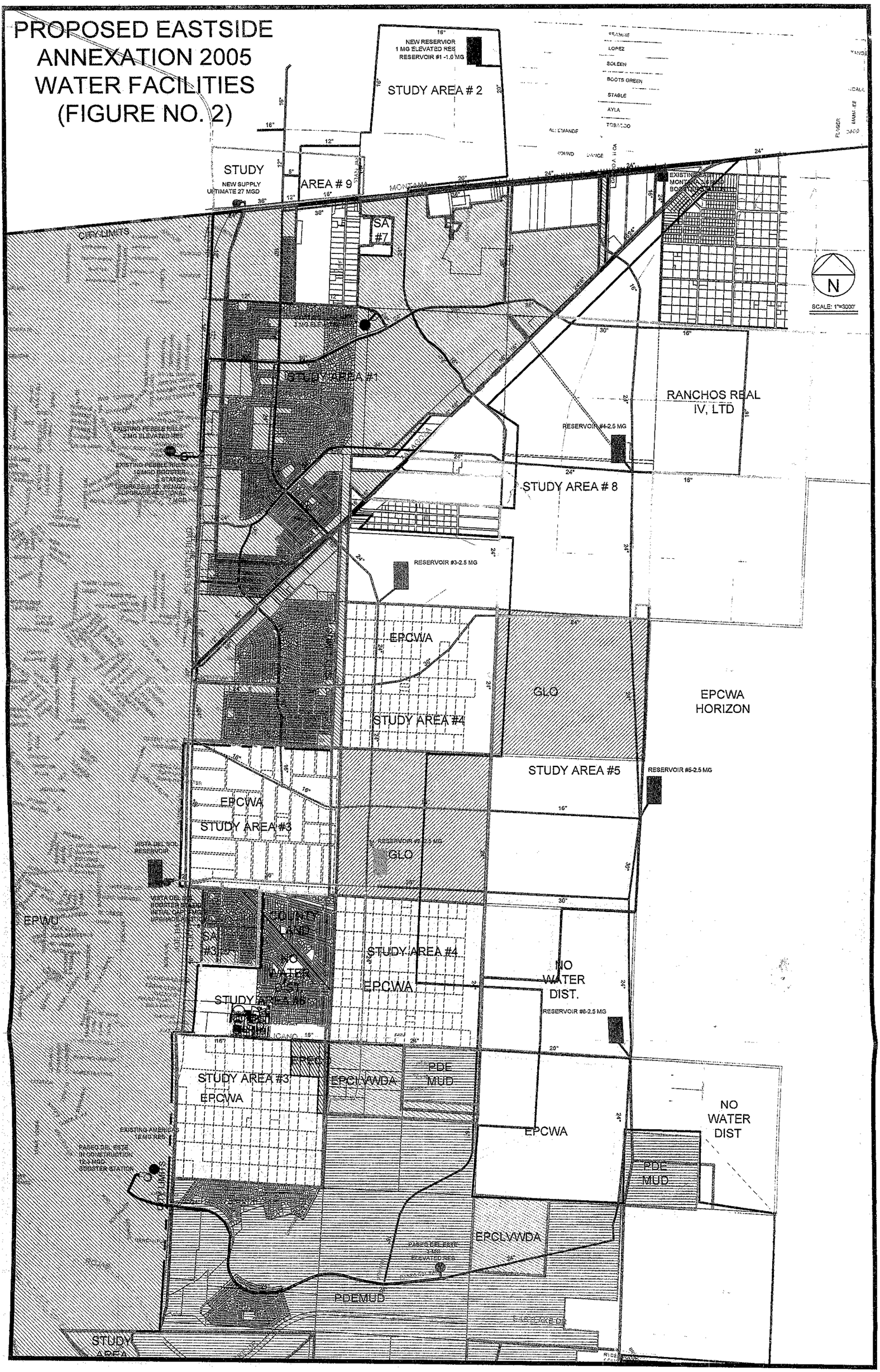
TOTAL STUDY AREAS-WASTEWATER

SQUARE MILES ACRES YEAR	POPULATION	# OF CONN. RESIDENTIAL	# OF CONN. COMMERCIAL	# OF CONN. SCHOOLS	TOTAL # OF CONN	TOTAL
UNIT COST						COST
2005	0	0	0		0	$ 102,900
2006	0	0	0		0	$ 1,406,505
2007	4,746	1,582	152	537	2,271	$ 4,666,440
2008	10,146	3,382	348	1,102	4,832	
2009	17,301	5,767	544	1,668	7,978	
2010	26,901	8,967	1,080	2,349	12,396	
2011	34,524	11,508	1,624	3,060	16,192	
2012	42,623	14,208	2,117	3,611	19,935	$ 236,963
2013	50,723	16,908	2,610	4,162	23,679	$ 1,895,700
2014	58,823	19,608	3,103	4,742	27,452	
2015	66,023	22,008	3,661	5,467	31,136	
2016	69,597	23,199	4,596	5,477	33,271	
2017	73,170	24,390	4,795	5,477	34,662	
2018	76,743	25,581	4,994	6,057	36,632	
2019	80,316	26,772	5,194	6,057	38,023	$ 295,943
2020	83,889	27,963	5,393	6,637	39,993	$ 2,367,540
2021	87,462	29,154	5,593	6,637	41,384	
2022	91,035	30,345	5,792	6,927	43,064	
2023	94,608	31,536	5,992	7,217	44,745	
2024	98,181	32,727	6,255	7,521	46,503	$ 279,158
2025	101,754	33,918	6,279	9,900	50,097	$ 2,233,260
2026	105,327	35,109	6,391	10,190	51,690	
2027	108,900	36,300	6,502	10,190	52,992	
2028	112,473	37,491	6,613	10,480	54,584	$ -
2029	116,041	38,680	7,514	10,770	56,966	
						$ 13,484,408

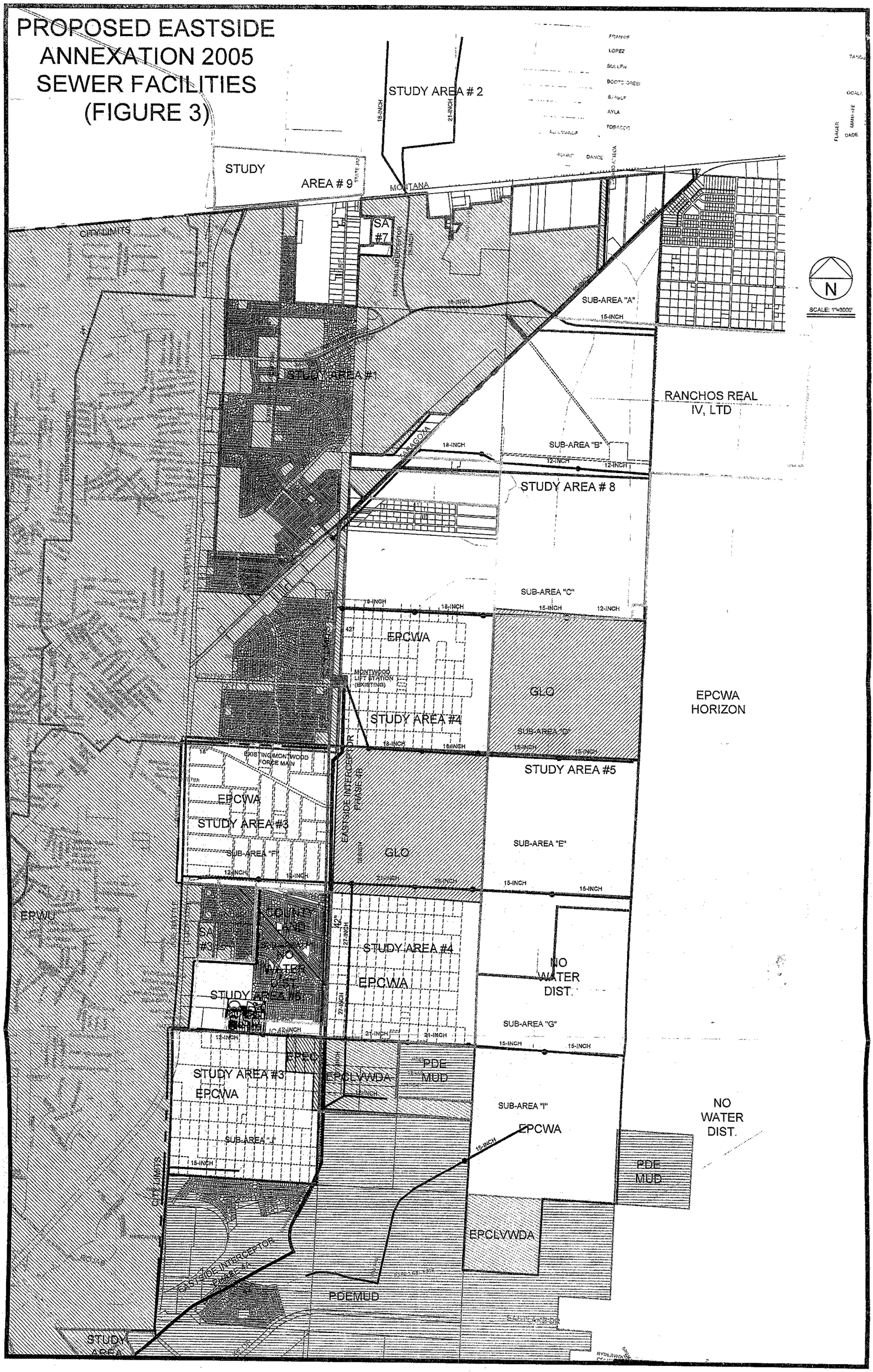
PROPOSED EASTSIDE ANNEXATION 2005 STUDY AREAS (FIGURE NO. 1)



PROPOSED EASTSIDE ANNEXATION 2005 WATER FACILITIES (FIGURE NO. 2)



PROPOSED EASTSIDE ANNEXATION 2005 SEWER FACILITIES (FIGURE 3)



Appendix B

Population and Inflation Assumptions

El Paso Water Utilities
Annexation Study 2005
Population Growth Assumptions

	Annexation Fee Study Area (1)															
	Area 2		Area 3		Area 4		Area 5		Area 6		Area 7		Area 8		Total	
Fiscal Year	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)	Population	Dwelling Units (2)
2004-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006-07	0	0	0	0	1,500	500	0	0	1,500	500	246	82	1,500	500	4,746	1,582
2007-08	300	100	0	0	3,000	1,000	0	0	2,700	900	246	82	3,900	1,300	10,146	3,382
2008-09	1,800	600	0	0	5,100	1,700	0	0	3,855	1,285	246	82	6,300	2,100	17,301	5,767
2009-10	4,200	1,400	900	300	7,500	2,500	1,500	500	3,855	1,285	246	82	8,700	2,900	26,901	8,967
2010-11	4,923	1,641	1,800	600	9,900	3,300	3,000	1,000	3,855	1,285	246	82	10,800	3,600	34,524	11,508
2011-12	4,923	1,641	2,700	900	12,600	4,200	5,100	1,700	3,855	1,285	246	82	13,200	4,400	42,624	14,208
2012-13	4,923	1,641	3,600	1,200	15,000	5,000	7,500	2,500	3,855	1,285	246	82	15,600	5,200	50,724	16,908
2013-14	4,923	1,641	4,500	1,500	17,400	5,800	9,900	3,300	3,855	1,285	246	82	18,000	6,000	58,824	19,608
2014-15	4,923	1,641	5,400	1,800	19,200	6,400	12,600	4,200	3,855	1,285	246	82	19,800	6,600	66,024	22,008
2015-16	5,244	1,748	5,504	1,835	20,610	6,870	13,585	4,528	3,855	1,285	246	82	20,553	6,851	69,597	23,199
2016-17	5,565	1,855	5,608	1,869	22,020	7,340	14,570	4,857	3,855	1,285	246	82	21,306	7,102	73,170	24,390
2017-18	5,886	1,962	5,712	1,904	23,430	7,810	15,555	5,185	3,855	1,285	246	82	22,059	7,353	76,743	25,581
2018-19	6,207	2,069	5,816	1,939	24,840	8,280	16,540	5,513	3,855	1,285	246	82	22,812	7,604	80,316	26,772
2019-20	6,528	2,176	5,920	1,973	26,250	8,750	17,525	5,842	3,855	1,285	246	82	23,565	7,855	83,889	27,963
2020-21	6,849	2,283	6,024	2,008	27,660	9,220	18,510	6,170	3,855	1,285	246	82	24,318	8,106	87,462	29,154
2021-22	7,170	2,390	6,128	2,043	29,070	9,690	19,495	6,498	3,855	1,285	246	82	25,071	8,357	91,035	30,345
2022-23	7,491	2,497	6,232	2,077	30,480	10,160	20,480	6,827	3,855	1,285	246	82	25,824	8,608	94,608	31,536
2023-24	7,812	2,604	6,336	2,112	31,890	10,630	21,465	7,155	3,855	1,285	246	82	26,577	8,859	98,181	32,727
2024-25	8,133	2,711	6,440	2,147	33,300	11,100	22,450	7,483	3,855	1,285	246	82	27,330	9,110	101,754	33,918
2025-26	8,454	2,818	6,544	2,181	34,710	11,570	23,435	7,812	3,855	1,285	246	82	28,083	9,361	105,327	35,109
2026-27	8,775	2,925	6,648	2,216	36,120	12,040	24,420	8,140	3,855	1,285	246	82	28,836	9,612	108,900	36,300
2027-28	9,096	3,032	6,752	2,251	37,530	12,510	25,405	8,468	3,855	1,285	246	82	29,589	9,863	112,473	37,491
2028-29	9,412	3,137	6,861	2,287	38,939	12,980	26,394	8,798	3,855	1,285	246	82	30,335	10,112	116,042	38,681
Total Square Miles		1.04		1.24		4.29		2.91		0.63		0.03		3.34		13.48
Total Acres		664		792		2,747		1,862		400		16		2,140		8,621
Population at Build-out		9,412		6,861		38,939		26,394		3,855		246		30,335		116,042

(1) No dwelling unit will be added in the first two fiscal years after annexation. Population and dwelling units added annually through FY 2014-15 and at build-out provided by Utility Staff.
FY 2015-16 through FY 2028-29 values based on uniform growth with an assumed build-out of 2030 for Annexed Areas 2 - 8.
(2) Each dwelling unit will be occupied by 3.0 persons

El Paso Water Utilities
Annexation Study 2005
Assumptions For Economic Analysis of Utility Costs

Debt Service		
Interest Rate	5%	
Term	20	
Inflation / Escalation Factor		
Capital	3.00%	
Discount Rate for NPV calculation	5.00%	
Water Use - Gallons Per Capita Per Day	140	gpcd
Wastewater Flow - GPCD	100	gpcd average over the study period
Persons Per Household	3.0	pph

Appendix C

Proposed Water Annexation Fee Calculation and Support Schedules

El Paso Water Utilities
Annexation Study 2005

WATER
(Inflated $)

Fiscal Year	Annexed Accounts (1)	Flow (1,000 gals.) (2)	PSB Average Rev. / Acct. (annual)	Revenue at PSB Rates	Water Costs O&M	Water Costs Capital	Water Costs Total	Water Surplus / (Deficit) O&M	Water Surplus / (Deficit) Capital	Water Surplus / (Deficit) Total	Cumulative
2004-05	-	-	$493	$0	$0	$25,366	$25,366	$0	($25,366)	($25,366)	($25,36
2005-06	-	-	505	-	-	404,068	404,068	-	(404,068)	(404,068)	(429,43
2006-07	1,582	242,521	505	798,910	317,703	11,524,302	11,842,005	-	(11,043,095)	(11,043,095)	(11,472,52
2007-08	3,382	518,461	530	1,792,460	720,661	11,524,302	12,244,963	-	(10,452,503)	(10,452,503)	(21,925,03
2008-09	5,767	884,081	530	3,056,510	1,237,713	11,524,302	12,762,015	-	(9,705,505)	(9,705,505)	(31,630,53
2009-10	8,967	1,374,641	556	4,985,652	1,938,244	11,524,302	13,462,546	-	(8,476,894)	(8,476,894)	(40,107,43
2010-11	11,508	1,764,176	556	6,398,448	2,522,772	11,568,603	14,091,375	-	(7,692,927)	(7,692,927)	(47,800,35
2011-12	14,208	2,178,086	583	8,283,264	3,136,444	11,951,902	15,088,346	-	(6,805,082)	(6,805,082)	(54,605,44
2012-13	16,908	2,591,996	583	9,857,364	3,784,314	12,112,440	15,896,754	-	(6,039,390)	(6,039,390)	(60,644,83
2013-14	19,608	3,005,906	612	12,000,096	4,418,682	12,276,691	16,695,373	-	(4,695,277)	(4,695,277)	(65,340,10
2014-15	22,008	3,373,826	612	13,468,896	5,027,001	12,947,879	17,974,880	-	(4,505,984)	(4,505,984)	(69,846,09
2015-16	23,199	3,556,407	624	14,476,176	5,370,175	12,947,879	18,318,054	-	(3,841,878)	(3,841,878)	(73,687,97
2016-17	24,390	3,738,987	624	15,219,360	5,720,650	12,959,223	18,679,873	-	(3,460,513)	(3,460,513)	(77,148,48
2017-18	25,581	3,921,567	636	16,269,516	6,078,429	13,052,692	19,131,121	-	(2,861,605)	(2,861,605)	(80,010,08
2018-19	26,772	4,104,148	636	17,026,992	6,443,512	13,173,324	19,616,836	-	(2,589,844)	(2,589,844)	(82,599,93
2019-20	27,963	4,286,728	648	18,120,024	6,773,030	14,167,325	20,940,355	-	(2,820,331)	(2,820,331)	(85,420,26
2020-21	29,154	4,469,308	648	18,891,792	7,150,893	14,167,325	21,318,218	-	(2,426,426)	(2,426,426)	(87,846,68
2021-22	30,345	4,651,889	661	20,058,045	7,536,060	14,198,780	21,734,840	-	(1,676,795)	(1,676,795)	(89,523,48
2022-23	31,536	4,834,469	661	20,845,296	7,928,529	14,457,972	22,386,501	-	(1,541,205)	(1,541,205)	(91,064,68
2023-24	32,727	5,017,049	674	22,057,998	8,328,301	14,657,666	22,985,967	-	(927,969)	(927,969)	(91,992,65
2024-25	33,918	5,199,629	674	22,860,732	8,735,377	16,317,519	25,052,896	-	(2,192,164)	(2,192,164)	(94,184,82
2025-26	35,109	5,382,210	674	23,663,466	9,149,757	16,435,923	25,585,680	-	(1,922,214)	(1,922,214)	(96,107,03
2026-27	36,300	5,564,790	687	24,955,524	9,571,439	16,435,923	26,007,362	-	(1,051,838)	(1,051,838)	(97,158,87
2027-28	37,491	5,747,370	687	25,774,313	10,000,424	16,435,923	26,436,347	-	(662,034)	(662,034)	(97,820,90
2028-29	38,681	5,929,797	701	27,124,262	10,436,443	16,435,923	26,872,366	-	251,896	251,896	(97,569,01
Total		16.25 MGD		$347,985,096	$132,326,553	$313,227,555	$445,554,108	$0	($97,569,012)	($97,569,012)	

NPV ($64,532,684)
Single Family Equivalent Units added through FY 2028-29 based on population and 3.0 pph. 38,681
Annexation Fee to Recoup Difference Between PSB Rates and East Area O&M and Capital Costs. $1,668

(1) Assumes 3.0 persons per household
(2) Based on 140 gallons per capita per day

El Paso Water Utilities
Annexation Study 2005
Summary Water Capital Facilities

	Capital Cost				Debt Service	
Fiscal Year	Local System	Suuport Facility (2)	2005 $	Inflated $	Current Year	Cumulative Total Annual
2004-05	$316,118	$0	$316,118	$316,118	$25,366	$25,366
2005-06	4,581,998	0	4,581,998	4,719,458	378,702	404,068
2006-07	16,424,460	114,203,030	130,627,490	138,582,704	11,120,235	11,524,302
2007-08	0	0	0	0	0	11,524,302
2008-09	0	0	0	0	0	11,524,302
2009-10	0	0	0	0	0	11,524,302
2010-11	462,360	0	462,360	552,082	44,300	11,568,603
2011-12	3,883,941	0	3,883,941	4,776,758	383,299	11,951,902
2012-13	1,579,338	0	1,579,338	2,000,658	160,538	12,112,440
2013-14	1,568,796	0	1,568,796	2,046,923	164,250	12,276,691
2014-15	6,223,968	0	6,223,968	8,364,493	671,189	12,947,879
2015-16	0	0	0	0	0	12,947,879
2016-17	99,150	0	99,150	141,364	11,343	12,959,223
2017-18	793,200	0	793,200	1,164,841	93,470	13,052,692
2018-19	993,879	0	993,879	1,503,331	120,631	13,173,324
2019-20	7,951,032	0	7,951,032	12,387,449	994,001	14,167,325
2020-21	0	0	0	0	0	14,167,325
2021-22	237,168	0	237,168	392,003	31,455	14,198,780
2022-23	1,897,344	0	1,897,344	3,230,101	259,192	14,457,972
2023-24	1,419,234	0	1,419,234	2,488,635	199,695	14,657,666
2024-25	11,453,022	0	11,453,022	20,685,432	1,659,853	16,317,519
2025-26	793,200	0	793,200	1,475,586	118,405	16,435,923
2026-27	0	0	0	0	0	16,435,923
2027-28	0	0	0	0	0	16,435,923
2028-29	0	0	0	0	0	$16,435,923
Total	**$60,678,208**	**$114,203,030**	**$174,881,238**	**$204,827,935**	**$16,435,923**	

(1) 20 Year Term, 5% Interest Rate

El Paso Water Utilities
Annexation Study 2005
Water Support Facility Allocation Calculation

Desalination Plant		
Description	**Calculation**	**Cost Allocation**
Capital Cost (1)		$87,000,000
Water Rights Acquisition Costs (1)		57,950,000
Subtotal		$144,950,000
Capacity (MGD) (1)	27.50	
Load Factor (1)	75%	
Net Supply		20.63
Cost per MGD		$7,027,879
Annexed Area Usage at Buildout (MGD)		16.25
Allocated Capital Costs		$114,203,030

(1) Per Utility Staff

El Paso Water Utilities
Annexation Study 2005
Calculated O&M Rate per KGAL

Fiscal Year	Population Growth	Water (1) Usage (kgal)	Water (1) O&M ($1,000's)	Water (1) O&M Rate Per Kgal
2005-06	2.46%	34,000,000	$42,335	$1.25
2006-07	2.40%	34,816,633	45,669	1.31
2007-08	2.35%	35,633,266	49,661	1.39
2008-09	2.29%	36,449,899	51,170	1.40
2009-10	2.24%	37,266,532	52,588	1.41
2010-11	1.80%	37,937,440	54,202	1.43
2011-12	1.80%	38,621,007	55,713	1.44
2012-13	1.80%	39,317,233	57,423	1.46
2013-14	1.80%	40,026,117	59,021	1.47
2014-15	1.80%	40,747,660	60,833	1.49
2015-16	1.80%	41,481,118	62,629	1.51
2016-17	1.80%	42,227,778	64,553	1.53
2017-18	1.80%	42,987,878	66,459	1.55
2018-19	1.80%	43,761,660	68,500	1.57
2019-20	1.80%	44,549,370	70,524	1.58
2020-21	1.80%	45,351,259	72,689	1.60
2021-22	1.80%	46,167,582	74,835	1.62
2022-23	1.80%	46,998,598	77,132	1.64
2023-24	1.80%	47,844,573	79,410	1.66
2024-25	1.80%	48,705,775	81,849	1.68
2025-26	1.80%	49,582,479	84,304	1.70
2026-27	1.80%	50,474,964	86,833	1.72
2027-28	1.80%	51,383,513	89,438	1.74
2028-29	1.80%	52,308,416	92,121	1.76

(1) Includes the combined water and reuse O&M less reuse revenue as water revenue subsidizes the cost of providing reuse service.

Appendix D

Proposed Wastewater Annexation Fee Calculation and Support Schedules

El Paso Water Utilities
Annexation Study 2005

WASTEWATER
(Inflated $)

Fiscal Year	Annexed Accounts (1)	Flow (1,000 gals.) (2)	PSB Average Rev. / Acct. (annual)	Revenue at PSB Rates	Wastewater Costs O&M	Wastewater Costs Capital	Wastewater Costs Total	Wastewater Surplus / (Deficit) O&M	Wastewater Surplus / (Deficit) Capital	Wastewater Surplus / (Deficit) Total	Cumulative
2004-05	-	-	$284	$0	$0	$797,443	$797,443	$0	($797,443)	($797,443)	($797,44
2005-06	-	-	275	-	-	913,691	913,691	-	(913,691)	(913,691)	(1,711,1
2006-07	1,582	173,229	275	435,050	240,788	3,814,886	4,055,674	-	(3,620,624)	(3,620,624)	(5,331,7
2007-08	3,382	370,329	287	970,634	518,461	3,814,886	4,333,347	-	(3,362,713)	(3,362,713)	(8,694,4
2008-09	5,767	631,487	287	1,655,129	890,397	3,814,886	4,705,283	-	(3,050,154)	(3,050,154)	(11,744,6
2009-10	8,967	981,887	301	2,699,067	1,394,280	3,814,886	5,209,166	-	(2,510,099)	(2,510,099)	(14,254,7
2010-11	11,508	1,260,126	301	3,463,908	1,814,581	3,814,886	5,629,467	-	(2,165,559)	(2,165,559)	(16,420,2
2011-12	14,208	1,555,776	315	4,475,520	2,271,433	3,838,272	6,109,705	-	(1,634,185)	(1,634,185)	(18,054,4
2012-13	16,908	1,851,426	315	5,326,020	2,721,596	4,030,968	6,752,564	-	(1,426,544)	(1,426,544)	(19,481,0
2013-14	19,608	2,147,076	330	6,470,640	3,199,143	4,030,968	7,230,111	-	(759,471)	(759,471)	(20,240,4
2014-15	22,008	2,409,876	330	7,262,640	3,638,913	4,030,968	7,669,881	-	(407,241)	(407,241)	(20,647,7
2015-16	23,199	2,540,291	336	7,794,864	4,064,466	4,030,968	8,095,434	-	(300,570)	(300,570)	(20,948,2
2016-17	24,390	2,670,705	336	8,195,040	4,326,542	4,030,968	8,357,510	-	(162,470)	(162,470)	(21,110,7
2017-18	25,581	2,801,120	342	8,748,702	4,593,837	4,030,968	8,624,805	-	123,897	123,897	(20,986,8
2018-19	26,772	2,931,534	342	9,156,024	4,866,346	4,066,887	8,933,233	-	222,791	222,791	(20,764,0
2019-20	27,963	3,061,949	348	9,731,124	5,144,074	4,362,866	9,506,940	-	224,184	224,184	(20,539,8
2020-21	29,154	3,192,363	348	10,145,592	5,427,017	4,362,866	9,789,883	-	355,709	355,709	(20,184,1
2021-22	30,345	3,322,778	354	10,742,130	5,715,178	4,362,866	10,078,044	-	664,086	664,086	(19,520,0
2022-23	31,536	3,453,192	354	11,163,744	6,008,554	4,362,866	10,371,420	-	792,324	792,324	(18,727,7
2023-24	32,727	3,583,607	361	11,814,447	6,307,148	4,402,145	10,709,293	-	1,105,154	1,105,154	(17,622,6
2024-25	33,918	3,714,021	361	12,244,398	6,610,957	4,725,805	11,336,762	-	907,636	907,636	(16,714,9
2025-26	35,109	3,844,436	361	12,674,349	6,919,985	4,725,805	11,645,790	-	1,028,559	1,028,559	(15,686,4
2026-27	36,300	3,974,850	368	13,366,386	7,234,227	4,725,805	11,960,032	-	1,406,354	1,406,354	(14,280,0
2027-28	37,491	4,105,265	368	13,804,936	7,553,688	4,725,805	12,279,493	-	1,525,443	1,525,443	(12,754,6
2028-29	38,681	4,235,570	376	14,527,980	7,920,516	4,725,805	12,646,321	-	1,881,659	1,881,659	(10,872,9
Total		11.60 MGD		$186,868,324	$99,382,127	$98,359,167	$197,741,294	$0	($10,872,970)	($10,872,970)	
NPV										($12,670,288)	
Single Family Equivalent Units added through FY 2028-29 based on population and 3.0 pph.										38,681	
Annexation Fee to Recoup Difference Between PSB Rates and Eastside Area O&M and Capital Costs.										$328	

(1) Assumes 3.0 persons per household
(2) Based on 119 gallons per capita per day

El Paso Water Utilities
Annexation Study 2005
Summary Wastewater Capital Facilities

	Capital Cost				Debt Service	
Fiscal Year	Local System	Suuport Facility (2)	2005 $	Inflated $	Current Year	Cumulative Total Annual
2004-05	$102,900	$9,835,004	$9,937,904	$9,937,904	$797,443	$797,443
2005-06	1,406,505	0	1,406,505	1,448,700	116,247	913,691
2006-07	4,666,440	29,413,409	34,079,849	36,155,312	2,901,196	3,814,886
2007-08	0	0	0	0	0	3,814,886
2008-09	0	0	0	0	0	3,814,886
2009-10	0	0	0	0	0	3,814,886
2010-11	0	0	0	0	0	3,814,886
2011-12	236,963	0	236,963	291,435	23,385	3,838,272
2012-13	1,895,700	0	1,895,700	2,401,416	192,696	4,030,968
2013-14	0	0	0	0	0	4,030,968
2014-15	0	0	0	0	0	4,030,968
2015-16	0	0	0	0	0	4,030,968
2016-17	0	0	0	0	0	4,030,968
2017-18	0	0	0	0	0	4,030,968
2018-19	295,943	0	295,943	447,640	35,920	4,066,887
2019-20	2,367,540	0	2,367,540	3,688,550	295,979	4,362,866
2020-21	0	0	0	0	0	4,362,866
2021-22	0	0	0	0	0	4,362,866
2022-23	0	0	0	0	0	4,362,866
2023-24	279,158	0	279,158	489,505	39,279	4,402,145
2024-25	2,233,260	0	2,233,260	4,033,516	323,660	4,725,805
2025-26	0	0	0	0	0	4,725,805
2026-27	0	0	0	0	0	4,725,805
2027-28	0	0	0	0	0	4,725,805
2028-29	0	0	0	0	0	$4,725,805
Total	**$13,484,409**	**$39,248,413**	**$52,732,822**	**$58,893,978**	**$4,725,805**	

(1) 20 Year Term, 5% Interest Rate

Bustamante Treatment Plant Cost Allocation		
Description	Calculation	Cost Allocation
RCN - Original Plant (1)	$80,584,575	
RCN - 2004 Improvements (1)	15,301,941	
Planned Expansion Cost (2)	33,000,000	
Total Capital Cost		$128,886,517
Current Plant Capacity (MGD) (2)	39.00	
Capacity Added Due Expansion (MGD) (2)	14.50	
Total Plant Capacity	53.50	
Load Factor	95%	
Net Capacity (MGD)		50.83
Cost Per MGD		$2,535,639
Annexed Area Usage at Buildout (MGD)		11.60
Allocated Costs		$29,413,409

Eastside Collector		
Description	Calculation	Cost Allocation
Capital Cost (2)		$38,751,000
Eastside Collector Capacity (MGD) (2)	45.70	
Annexed Area Usage at Buildout (MGD)	11.60	
Capacity Surplus / (Deficit) (MGD)	34.10	
Percent of Capacity Allocation		25.38%
Allocated Costs		$9,835,004

(1) Original expenditure costs escalated at the Engineering News Record Construction Cost Index to arrive at the current Replacement Cost New (RCN) asset value.
(2) Per Utility Staff

El Paso Water Utilities
Annexation Study 2005
Existing Bustamante Plant Replacement Cost New Calculation

Bustamante Plant - Existing Asset	Original Cost	ENR Index (1)	Replacement Cost New (RCN)
1991 - Original Plant Cost (2)	$52,613,161	1.53	$80,584,575
2004 - Additional Work (2)	14,565,003	1.05	15,301,941
Total RCN			$95,886,517

(1) Engineering New Record Construction Cost Index 20-City Average
(2) Per Utility Staff

El Paso Water Utilities
Annexation Study 2005
Calculated O&M Rate per KGAL

Fiscal Year	Population Growth	Wastewater Usage (kgal)	Wastewater O&M ($1,000's)	Wastewater O&M Rate Per Kgal
2005-06	2.46%	15,940,000	$22,077	$1.39
2006-07	2.40%	16,322,857	22,739	1.39
2007-08	2.35%	16,705,714	23,421	1.40
2008-09	2.29%	17,088,571	24,124	1.41
2009-10	2.24%	17,471,428	24,848	1.42
2010-11	1.80%	17,785,966	25,593	1.44
2011-12	1.80%	18,106,438	26,361	1.46
2012-13	1.80%	18,432,845	27,152	1.47
2013-14	1.80%	18,765,187	27,967	1.49
2014-15	1.80%	19,103,463	28,806	1.51
2015-16	1.80%	19,447,325	31,159	1.60
2016-17	1.80%	19,797,377	32,094	1.62
2017-18	1.80%	20,153,730	33,057	1.64
2018-19	1.80%	20,516,497	34,049	1.66
2019-20	1.80%	20,885,794	35,070	1.68
2020-21	1.80%	21,261,738	36,122	1.70
2021-22	1.80%	21,644,449	37,206	1.72
2022-23	1.80%	22,034,049	38,322	1.74
2023-24	1.80%	22,430,662	39,472	1.76
2024-25	1.80%	22,834,414	40,656	1.78
2025-26	1.80%	23,245,433	41,876	1.80
2026-27	1.80%	23,663,851	43,132	1.82
2027-28	1.80%	24,089,800	44,426	1.84
2028-29	1.80%	24,523,416	45,759	1.87